

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q94265

Takeshi SAITO, et al.

Appln. No.: 10/574,690

Group Art Unit: 3627

Confirmation No.: 3719

Examiner: Not Yet Assigned

Filed: April 5, 2006

For: GLIDE HEAD FOR MAGNETIC DISK

SUBMISSION OF INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant submits herewith copies of the Transmittal and International Preliminary Report on Patentability for the above identified application. Also enclosed is the Written Opinion of the International Searching Authority.

All references mentioned appear in the IDS filed in the USPTO on April 5, 2006.

Respectfully submitted,



/Peter D. Olexy/

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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: June 19, 2007

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

MORITA, Hiroshi
Kaimai Patent Office
Sankey Central Plaza
Building 5F
11-8, Nishi-Nippori 5-chome
Arakawa-ku, Tokyo 1160013
JAPON

Date of mailing (day/month/year)
29 March 2007 (29.03.2007)

Applicant's or agent's file reference
50601DE05F02

IMPORTANT NOTIFICATION

International application No.
PCT/JP2005/014742

International filing date (day/month/year)
11 August 2005 (11.08.2005)

Applicant
HITACHI METALS, LTD. et al

1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Yoshiko Kuwahara

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

| | | | |
|--|---|--|------------------|
| Applicant's or agent's file reference 50601DE05F02 | FOR FURTHER ACTION | | See item 4 below |
| International application No. PCT/JP2005/014742 | International filing date (day/month/year) 11 August 2005 (11.08.2005) | Priority date (day/month/year) 09 September 2004 (09.09.2004) | |
| International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237 | | | |
| Applicant HITACHI METALS, LTD. | | | |

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(3), before the expiration of 30 months from the priority date (Rule 44bis.2).

| | |
|---|---|
| | Date of issuance of this report 20 March 2007 (20.03.2007) |
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70 | Authorized officer Yoshiko Kuwahara e-mail: p107.pct@wipo.int |

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

TRANSLATION

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

50601DE05F02

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2005/014742

International filing date (day/month/year)

11.08.2005

Priority date (day/month/year)

09.09.2004

International Patent Classification (IPC) or both national classification and IPC

Applicant

HITACHI METALS, LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Date of completion of this opinion

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/014742

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:
☒ the international application in the language in which it was filed
☐ the translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rule 12.3(a) and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ on paper
☐ in electronic form
 - c. time of filing/furnishing
☐ contained in the international application as filed
☐ filed together with the international application in electronic form
☐ furnished subsequently to this Authority for the purposes of search
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/014742

| | | | |
|--|--|------------|-----|
| Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | |
| 1. Statement | | | |
| Novelty (N) | Claims | <u>1-7</u> | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | <u>1-7</u> | NO |
| Industrial applicability (IA) | Claims | <u>1-7</u> | YES |
| | Claims | | NO |
| 2. Citations and explanations: | | | |
| Document 1: JP, 2002-190109, A (Hitachi Metals, Ltd.), 5 July, 2002 (05.07.02), paragraphs 0027-0036, Figs. 1-3 | | | |
| Document 2: JP, 2003-030944, A (Fujitsu Ltd.), 31 January, 2003 (31.01.03), paragraphs 0043-0049, Fig. 2 & US, 2003-026015, A1 | | | |
| Document 3: JP, 07-111053, A (Toshiba Corp.), 25 April, 1995 (25.04.95), full text, Figs. 17, 18, and 23 & US, 6021024, A | | | |
| <p>The subject matters of claims 1-3 do not appear to involve an inventive step in view of documents 1 and 2 cited in the ISR. Document 1 (paragraphs 0027-0036 and Figs. 1-3) describes that a magnetic disc glide head having two rails and a piezoelectric element floats at a floating pitch angle 7.5×10^{-4} degrees. Document 2 (paragraphs 0043-0049 and Fig. 2) describes that the floating pitch angle is set to 100 μrad or more and a load point is set at a point so that the ratio of the length of the air inlet to the load point and the overall length of a slider is approximately 0.8 to improve detection sensitivity. A person skilled in the art could have easily shifted the load point toward the air inlet also in the magnetic disc glide head described in document 1.</p> | | | |
| <p>The subject matter of claim 4 does not appear to involve an inventive step in view of documents 1, 2, and 3 cited in the ISR. Document 3 (Figs. 17, 18, and 23) describes a magnetic head slider having grooved rails to form a pitch angle. A person skilled in the art could have easily grooved the rails also in the magnetic disk glide head described in document 1 to form the pitch angle.</p> | | | |
| <p>The subject matter of claim 5 does not involve an inventive step in view of documents 1 and 2 cited in the ISR. Document 1 (Fig. 2) and document 2 (Fig. 2) describe that a taper is arranged at the rail tip end.</p> | | | |
| <p>The subject matter of claim 6 does not appear to involve an inventive step in view of documents 1 and 2 cited in the ISR. Document 1 (Fig. 1) describes that the width of an outflow end side of the rail is extended so as to extend the width to be inspected.</p> | | | |
| <p>The subject matter of claim 7 does not involve an inventive step in view of documents 1 and 2 cited in the ISR. Document 1 (paragraph 0028) describes that a disk is inspected with a peripheral speed of 8 m/sec-16 m/sec and a floating quantity of 5 nm.</p> | | | |